

ENERGY - SLOVAK REPUBLIC 1999

I. Statistical Information - Primary Energy Consumption

| 1999 | KTOE | % |
|--------------|-------------|------------|
| Coal | 1305 | 25.91 |
| Petroleum | 40 | 0.79 |
| Natural Gas | 160 | 3.18 |
| Hydro | 310 | 6.15 |
| Nuclear | 3220 | 63.95 |
| Renewable | - | - |
| Total | 5035 | 100 |

II. Evaluation Sector - Electrical power Systems, Oil and Gas field machinery and Services and Renewable Energy Equipment

- A) On a scale of 1 (low) to 5 (high), evaluate the priority given by the host government to energy development: 3
- B) On a scale of 1 (low) to 5 (high), evaluate country's receptivity to U.S. products & services: 3
- C) On a scale of 1 (heavy) to 5 (little), evaluate competition for U.S. exporters from local domestic suppliers: 4
- D) On a scale of 1 (heavy) to 5 (little), evaluate competition for U.S. exporters from third/country suppliers: 2
- E) On a scale of 1 (severe) to 5 (little), evaluate overall effect of trade barriers on U.S. exports of products and services: 4

III. Narrative Information

Privatization process

Several state enterprises from the energy sector were privatized during the Czech and Slovak Federation period (1990 - 1992). In 1995, however, the Slovak National Council adopted act no. 192/95 allowing the state to designate certain sectors as vital to the state's interest and not subject to privatization. This act excluded state shares of the following from the privatization process: the gas industry, where state-owned Slovak Gas Industry s.p. has a monopoly position; the regional electricity transmission companies; the monopoly producer of electric energy, Slovenske Elektrarne a.s.; and the state-owned monopoly oil distribution company, Transpetrol a.s. **These sectors and companies are still fully owned by the state.**

The situation began changing again, however, after the election and change in government in September 1998. The Slovak National Council has since amended act no. 192/95 to allow privatization of "natural monopolies." The Slovak Government now plans to privatize Transpetrol and Slovak Gas Industry s.p. by the end of this year. The Ministry of Economy has been instructed to submit a restructuring plan for the energy sector by the end of May 2000, which will reveal the privatization plans for Slovenske Elektrarne a.s. and three transmission companies.

Electrical Power Generation and Transmission Equipment (ELP)

| 1999 | Capacity MW | Product GWh |
|--------------|--------------|---------------|
| Thermal | 1,964 | 7,119 |
| Hydro | 2,369 | 4,857 |
| Nuclear | 2,200 | 13,117 |
| Total | 6,533 | 25,093 |

- **Total installed and in use capacity:** 6,787 MW
- **Breakdown of capacity (MW):**
 - based on coal: 1,303
 - based on oil and gas: 660
 - nuclear: 1,760

- co-generation: 2,409

- **Total electricity consumption (GWh) in 1999:** 26,351

The Slovak market for electric power generation is small compared to other central European countries. In 1999, 52.27% of the production of 32,943 GWh of electricity in Slovakia was obtained from nuclear power stations, 28.37% from fossil fuels, 19.36% from hydro stations, 8.5% from industrial power sources, 15.33% was imported and 15.46% exported. Domestic sources of fossil fuels supplied 11% of Slovakia's requirements, the remaining 89% being imported, mainly from Russia. Expectations for electricity consumption over the next three years vary from 4 to 7 TWH.

- **Transport and distribution lines (lengths, capacity and so on)**

| Voltage kV | Capacity Mwe | Loss % | Length Km |
|---------------|-----------------|-----------|--------------|
| 22 | 6,300 | - | 29,151 |
| 110 | 6,950 | - | 6,558 |
| 200 | 1,440 | 0.4 | 964 |
| 400 | 8,310 | 0.5 | 1,677 |

- **Considerations re. technical level of facilities**

Thermal power plants are in good condition, but seek additional modern filtration systems.

Hydro power plants are modern and in good condition.

Nuclear power plants are being built or modernized to meet international safety criteria. Slovenske Elektrarne (SE a.s.) has completed the first two units at the new nuclear power plant at Mochovce, with a capacity 2 x 440 MW. Two units at the Jaslovské Bohunice plant, with a capacity 2 x 440 MW, are gradually being rebuilt. Transport and distribution lines are in good condition. Distribution of electricity is secured by three distribution companies via high voltage and low voltage grids. These companies conduct maintenance, renovation and development of the distribution network, and the major part of heat supply from central heating plants.

- **Estimated market for Electric Power Equipment** (see harmonized code attachment for reference)

Market for electric power generation equipment (USD millions):

| Year | 1996 | 1997 | 1998 | Assumption 2000 |
|-----------------------|-------|-------|------|--------------------|
| Import market | 160.4 | 306.7 | 316 | 433 |
| Local production | 205.4 | 266.7 | 244 | 286.7 |
| Exports | na | na | na | na |
| Total market | na | na | na | na |
| Imports from U.S. | 0.21 | 0.83 | | |
| Exchange rates SK/USD | 30 | 34 | 36 | 48 |

1996 import shares for the United States and major competitors (excluding nuclear technology):

United States: 1.20%, Czech Republic: 48.12%, Germany: 19.94%, Austria: 15.58%

Market for gas turbines (HSC 85023099) in USD:

| Year | 1995 | 1996 | Jan-July 1997 | Assumption 2000 |
|--------------------|---------|---------|---------------|--------------------|
| Import market | 912,023 | 519,719 | 98,414 | 1,200,000 |
| Local production | na | na | na | |
| Exports | na | 28,181 | 16,484 | |
| Total market | na | na | na | |
| Imports from U.S. | 0 | 0 | 0 | |
| Exch. Rates SK/USD | 29 | 30 | 34 | 48 |

Market for transformers (HSC 850422) in USD:

| Year | 1995 | 1996 | Jan-July 1997 | Assumption 2000 |
|------|------|------|---------------|--------------------|
|------|------|------|---------------|--------------------|

| | | | | |
|--------------------|---------|---------|---------|---------|
| Import market | 680,608 | 187,012 | 526,617 | 900,000 |
| Local production | na | na | na | |
| Exports | 549,048 | na | 190,303 | |
| Total market | na | na | na | |
| Imports from U.S. | 0 | 0 | 0 | |
| Exch. Rates SK/USD | 29 | 30 | 34 | 48 |

Market for switchgears (HSC 853720) in USD:

| Year | 1995 | 1996 | Jan-July 1997 | Assumption 2000 |
|--------------------|-----------|-----------|---------------|--------------------|
| Import market | 3,035,706 | 3,903,123 | 4,180,326 | 8,000,000 |
| Local production | na | na | na | |
| Exports | 2,558,187 | 385,590 | 498,312 | |
| Total market | na | na | na | |
| Imports from U.S. | 0 | 0 | 0 | |
| Exch. Rates SK/USD | 29 | 30 | 34 | 48 |

Sources: Ministry of Economy of Slovak Republic, Slovak Statistic Office.

- **Power equipment manufacturing facilities**

SEZ, a.s., based in Tlmače, is a producer of secondary equipment and parts for nuclear power stations including heat exchangers. Basic equipment for nuclear power stations, e.g., machinery, electric parts, metering and control devices, are supplied from abroad.

- **Government's overall energy policy**

The Ministry of Economy issued "The Energy Concept for SR until year 2005" in 1997 and "Energy Policy for SR" in 1999. Together, these papers define the basic goals and starting points of energy policy, analyze the current status of the energy sector and determine the strategy for securing the economy with fuels and energy. Emphasis is given to energy savings that could be achieved by macro-economic measures, upgrading of production processes, independent pricing policy and efficient utilization of resources. The Energy Concept paper analyzes and seeks to solve coverage of electric energy needs up to 2010, defining the structure of electricity sources from the point of view of stability, dynamic properties and economy of operation. The paper evaluates also the fulfillment of international covenants for clean air protection, especially regarding production of greenhouse gases.

- **Status of liberalization, subsidies**

Please see the review of privatization above. The Slovak Republic is a signatory of EECH. The legal framework has a declared aim of full liberalization of electricity market. Distribution systems are still owned by the state, but privatization should start in 2000. Subsidies governed by the law for heat supplies to households are included in prices of fuels; price reductions will be coordinated with future liberalization. Production of energy technology is not directly subsidized from the state budget, although energy technologies may be the subject of state-financed scientific and technical projects.

- **Electricity import/export**

The Ministry of Economy supervises issuance of licenses for import and export of electricity. The central dispatch in Žilina is responsible for technical realization. A limiting factor for electricity exchanges with foreign countries is the technical parameters of tie-lines. Attention is being given to strengthening these transmission lines by either new construction or upgrading of lines.

- **Electricity tariffs**

Prices of electric energy for some customers (especially for households) do not adequately reflect actual costs. This jeopardizes plans for environmental improvements and restructuring of the energy production and transmission industries. The Government is raising prices to the extent it is felt this is politically feasible. Electricity prices were increased by 40 % during 1999 and 2000. The Government plans to increase electricity prices by another 20 % in 2001, and a further 10 % in 2002.

The rules for price regulation, intended to be a simulation of price competition, are covered under Act of the Slovak National Council No. 18/1996 Coll. Prices for end users are set and regulated by the Ministry of Finance and published through price decrees. The Slovak Government intends to establish an independent Regulation Office by the end of 2000 that will set and regulate prices of all natural monopolies including electric energy and heat supply.

- **Import regulations applied to electrical equipment**

The Office of Standardization, Metrology and Testing (OSTM) approves imports of electric appliances and most electrical equipment. Standards and testing applied to imports are binding also for domestic producers. Import, export and trade of nuclear material and facilities are controlled and/or monitored by the Ministry of Economy and the Nuclear Regulatory Authority. They follow regulations incorporated in the Decree of CSAEC No. 28/1997 (accounting for and control of nuclear material), Act No. 547/1990 and Decree of Ministry of Economy of the Slovak Republic No. 23/1994 (export and import of selected items). These decrees reflect the IAEA documents INFCIRC/173, INFCIRC/209 and INFCIRC/254.

- **Brief description of financial health of electric utilities**

Information is closely held and not publicly available.

- **Coal production, imports and exports and how it affects energy market.**

Annual production of brown coal is 3.9 million tons. There is no production of black coal. Annual import of brown coal is 1.4 million tons and import of black coal is 4.3 million tons.

Oil & Gas Industry and Equipment Market

- **Total oil/gas deposits and production**

Total oil deposit is 380,000 m³ and gas deposit is 1.8 billion m³ / year. Annual exploitation of oil is 60,000 tons and annual import of oil is 5.4 million tons. Annual exploitation of gas is 260 million m³ and annual import of gas is 3.6 billion m³. Total volume of gas transport for foreign countries is 84.1 billion m³ / year. Geological surveys indicate possibilities for finding new deposits in the Vienna Basin.

- **Total oil refining capacity of which in use**

Total oil refining capacity is 6 million tons. Slovnaft a.s. processes 6 million tons of crude oil per year, and is the only refinery in the country.

- **Existing oil and gas pipelines**

Slovakia imports 97% of its crude oil from Russia through the Druzba pipeline, and 3% from North Africa with the Adria pipeline. Slovakia has been able to import crude oil through the Ingolstadt-Kralupy pipeline from the Czech Republic since 1996. Austria's AWP pipeline at Schwechat is only 50 km from a possible connection with the Druzba pipeline in Slovakia. Slovnaft a.s and Transpetrol a.s are discussing an eventual interconnection of the AWP and Druzba pipelines with OMV in Austria - the owner of AWP.

The state-owned Slovensky plynarensky priemysel s.p. (Slovak Gas Industry - SGI), has a monopoly as owner and operator of transport and distribution gas pipelines in Slovakia. Nafta Gbely a.s. does geological surveys and exploration for crude oil and natural gas in Slovakia, as well as underground gas storage with a capacity of 1.7 billion cubic meters (of the country's total storage capacity of 1.8 billion cubic meters). Natural gas provides about 28% of Slovakia's energy needs, and this seems likely to increase to 35% by 2010. The gas pipeline network is 16,000 km long, of which 11,000 km serves distribution within Slovakia. The gas industry provides reliable transit services for 80 billion cubic meters annually through Slovakia to consuming countries in Western Europe, making Slovakia the second largest transporter of

natural gas in the world. Slovak Gas Industry is expanding transit pipeline capacity by building a fifth line. Slovak Gas Industry also is reviewing projects for connection of gas networks for the north-south Jamal pipelines.

- **Oil and gas consumption**

Domestic extraction of crude oil is approximately 60,000 tons annually, only 1.5% of domestic consumption. Annual consumption is approximately 5.4 million tons. Gas extraction in Slovakia represents only 5% of consumption, which is about 3.6 billion cubic meters annually.

- **Considerations regarding technical level of facilities**

The quality is good due to strong reconstruction investment in pipelines and transport facilities.

- **Oil and gas equipment manufacturing facilities**

No information is available.

Renewable Energy Equipment (REQ)

- **Impact on overall primary energy consumption**

In 1998, promotion projects saved 24,740 TJ of heat including 3805 GWh of electric energy. This represented 8% of consumption of energy in Slovakia in 1998. The total potential of renewable energy in Slovakia is 100,400 TJ.

- **Government policy towards renewable energy**

Support programs focused on energy savings since 1991 have supported 612 projects. The focus is on energy savings, or acquiring energy from secondary and renewable sources. The government developed a tax holidays system (1 plus 5 years after the commissioning of the plant) that supports renewable sources. Promotion of recycled and renewable sources is a focus of pilot projects.

- **Small Hydropower**

Small hydropower plants produce 202 GWh annually, with an installed capacity of 45 MW. The potential of hydropower energy in Slovakia is 3,722 TJ.

- **Biomass**

Biomass is exploited only for heating small buildings. The real potential of biomass energy in Slovakia is 33,041 TJ

- **Wind Energy**

The potential of wind energy in Slovakia is low, said to be only about 2,174 TJ.

- **Photovoltaic solar energy**

Not utilized.

- **Thermal Solar Energy**

Small thermal solar panels produce 7 GWh annually. The real potential of thermal solar energy in Slovakia is 5,200 GJ or 18,720 TJ. The annual growth of new installed collectors is 0.35 square meters per 1,000 inhabitants.

- **Geothermal Energy**

Geothermal energy is used at 35 localities with strength of 110 liters per second and a thermal power of 338 GWh. The real potential of geothermal energy in Slovakia is 22,680 TJ.

- **Municipal solid waste**

Two incinerators in Bratislava and Kosice dispose of 160,000 tons per year. The potential of municipal solid waste energy in Slovakia is 33,041 TJ.

IV. Major Procurements or Private Projects

We anticipate that macro investment in the energy sector will be approximately US\$1.3 billion between 2001 and 2005, and about US\$800 million in 2006 – 2010. About 55-65% of these investments is expected to come from internal sources. The rest may be secured by a combination of local and foreign loans.

There are no plans for significant development in the coal sector. Investment needs in coal are thought to be about US\$16.66 million a year, directed towards technology upgrading and renovation.

The largest ongoing and planned projects of SE a.s. are:

SE a.s. will reconstruct two units of the thermal power plant at Vojany with a capacity of 2 x 110 MW so that environmental limits are met. Vojany uses brown coal as fuel. SE a.s. will announce an international tender in 2000 with construction scheduled for 2001 - 2003.

SE a.s. plans reconstruction of the Novaky thermal power station (ENO) to bring units 3 and 4 into compliance with the law on clean air protection.

SE a.s. will renovate a heating plant in Kosice by installing combined cycle technology with a capacity of 1 x 100 - 200 MW. SE a.s. will announce an international tender in 2002, with renovation planned for 2003 - 2005.

SE a.s. plans to build a new gas-fired combined cycle plant with a capacity 1 x 100 MW. SE a.s. will announce an international tender in 2004 and construction during 2005 - 2006. We do not know the projected location of the plant.

SE a.s. plans to build a new hydro power station at Sered with a capacity of 47 MW. SE a.s. will announce international tenders in 2004 with construction during 2005 - 2007.

SE a.s. plans to build a new hydro power station in Strecno, but the schedule and planned capacity have not been announced.

SE a.s., Vodohospodarska vystavba s.p., along with Austrian partners, plan to construct a hydroelectric dam on the Danube between Wolfstal in Austria and Bratislava in Slovakia.

V. Major Trade Events / Fairs in 2000

Ecology and Energy Fairs

| Date | Exhibition | Venue |
|-----------------|-------------------|--------------|
| May 03-06 | Enviro' 2000 | Nitra |
| September 19-21 | Komunál | Zilina |
| June 06-09 | Ekotechnika | Bratislava |

Mechanical Engineering Fairs

| Date | Exhibition | Venue |
|-----------------|--------------------------------|--------------|
| October 04 – 06 | Strojexpo Cassovia | Košice |
| May 30-June 2 | Medzinárodný strojársky Veľtrh | Nitra |

VI. Country's Methods of Procurements

State-owned Slovak companies interested in purchasing power generating equipment must issue a public tender with technical specifications. The Ministry of Justice publishes each public tender in daily newspapers and in the weekly magazine Obchodny vestník. SE a.s. usually issues an international public tender and announces it in *The Economist*. U.S. companies interested in bidding should submit all requested documents as soon as possible. On the bidding day, a procurement committee may open all offers. Each

company that sent offers can participate on the bidding day and observe the selection process. The legislative framework for competition includes the Act on Providing of Public Orders no: 263/1993 and the Act on Protection of Economic Competition no. 188/94. Other conditions for business are set in the Commercial Code.

VII. Means of Financing Procurements

State-owned Slovak companies finance their purchases of power generation equipment through bank loans or syndicated loans that can be guaranteed by the Government. Slovak companies prefer performance contracting, which means that equipment is paid from savings. Generally, financing details are set individually on each contract.

VIII. Points of Contact

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B) Ministry of Economy

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IX. Additional Sources of Information on Sector

Producers of electric energy:

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Enterprises - the biggest consumers of electric energy in Slovakia:

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The main Slovak producers of power equipment:

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